ADVANCED ANALYSIS IN LEARNING AND MEMORY

NB240 - Winter 2020

Instructors: Guzowski and Yassa

Time:	Tuesdays 9:30am-12:20pm	
Place:	Weinberger Conference Room (Bonney Research Laboratory)	
Instructors:	John Guzowski Office: BRL 108 john.g@uci.edu	Michael Yassa Office: BS3 1148 myassa@uci.edu

Course Concept

This advanced course tackles complex concepts, theory, methods, and experiments in learning and memory. It is required training for students who are supported by the CNLM's NIMH-funded T32 Training Program in learning and memory and is recommended training for students in all CNLM laboratories.

The course alternates on a yearly basis between two complementary formats:
(1) **Broad Survey**: A critical review and discussion of several contemporary and interesting active debates in learning and memory;
(2) **Deep Dive**: A comprehensive dissection of one particular topic in learning and memory and a detailed analysis of a number of relevant issues related to that topic.

In Winter 2020, the course is in the **DEEP DIVE** format on the Neural-Immune Interface.

Requirements and Grading

Your performance in the course will be evaluated based on four criteria:
(1) Active participation in class discussions 25%
(2) Presentation of your assigned readings (several throughout the quarter) . 25%
(3) Final written project proposal (2-3 page proposal of a novel experiment) . 25%
(4) Final project presentation 25%

Schedule of Classes and Readings

1/07/2020 Organizing meeting and final topics list and assignments

1/14/2020 **What role do glia cells, and their effector molecules, play in learning and memory?**

1/21/2020 **What role do neural-immune interactions play in synaptic plasticity?**

1/28/2020	**What role do neural-immune interactions play in developmental plasticity (basic mechanisms)?**
2/04/2020	**How does dysregulation of neural-immune interactions during development contribute to CNS pathologies (e.g., autism, schizophrenia, depression, etc.)?**
2/11/2020	**Modulators of the neural-immune interface (e.g., sex, microbiome, ELS, etc).**
2/18/2020	**Neural-immune interactions, aging, and cognitive function**
2/25/2020	**Neural-immune interactions in neurodegenerative disease: The good & the bad**
3/03/2020	**Can a better understanding of neuroimmune dysregulation lead to better diagnostic and therapeutic approaches for neurodegenerative and neuropsychiatric disorders**
3/10/2019	**Synthesis: What are the critical areas of research needed to provide key insights into how the neural immune interface influences cogntive function in health and disease?**